CLAIMS

1. A vacuum heat insulator comprising:

a core formed of a laminated body where glass fibers are laminated in a thickness direction: and

an enveloping member covering the core and having gas barrier property,

wherein the core is pressurized and molded and the glass fibers are drawn by heat deformation of the glass fibers at one of the following temperatures:

a temperature at which the glass fibers start to slightly deform due to own weight of the glass fibers; and

a temperature at which the glass fibers become deformable due to a vertical load in pressing and sectional shapes of the glass fibers do not significantly vary, and

a shape of the core is kept by entanglement of parts of the glass fibers instead of binding of the glass fibers.

2. The vacuum heat insulator according to claim 1,

wherein glass wool is used as the glass fibers.

3. The vacuum heat insulator according to claim 1,

wherein the core is free from binding material for binding the glass fibers.

4. The vacuum heat insulator according to claim 1,

wherein the core contains binding material for binding the glass

fibers.

5. The vacuum heat insulator according to claim 1,

wherein density of the core is at least 100 kg/m^3 and at most 400 kg/m^3.

6. The vacuum heat insulator according to claim 1,

wherein the core plastically deforms in a density of at least 100 kg/m^3 and at most 400 kg/m^3.

7. The vacuum heat insulator according to claim 1,

wherein the core has a smooth surface layer on at least one-side surface in a lamination direction of the assembly.

8. The vacuum heat insulator according to claim 1,

wherein the glass fibers contain an alkali component of at least 0.8% and at most 20% in weight.

9. A hot-insulation cold-insulation apparatus comprising:

a box body;

the vacuum heat insulator according to claim 1 applied to at least a wall part of the box body; and

a temperature regulator for keeping temperature in the box body.

10. A heat insulation board comprising a laminated body where glass fibers are laminated in a thickness direction, wherein

the heat insulation board is pressurized and molded and the glass

fibers are drawn by heat deformation of the glass fibers at one of the following temperatures:

a temperature at which the glass fibers start to slightly deform due to own weight of the glass fibers; and

a temperature at which the glass fibers become deformable due to a vertical load in pressing and sectional shapes of the glass fibers do not significantly vary, and

a shape of the heat insulation board is kept by entanglement of parts of the glass fibers instead of binding of the glass fibers.

11. A manufacturing method of a vacuum heat insulator comprising:

laminating and arranging glass fibers in a thickness direction and molding an assembly where the glass fibers are partially entangled;

heating and pressing the assembly at one of the following temperatures:

a temperature at which the glass fibers start to slightly deform due to own weight of the glass fibers; and

a temperature at which the glass fibers become deformable due to a vertical load in pressing and sectional shapes of the glass fibers do not significantly vary, and

thermally deforming the assembly into a shape at a heating and pressing time;

cooling the assembly thermally deformed in a state at the heating and pressing time to form a board-like core that keeps the shape at the heating and pressing time and has high restrictiveness and integrity in a thickness direction;

drying the core and then inserting the core into an enveloping member that is formed of bag-like laminated film having an opening; and

evacuating the inside of the enveloping member and heat-sealing the opening.

12. The manufacturing method of the vacuum heat insulator according to claim 11,

wherein the glass fibers contain an alkali component of at least 0.8% and at most 20% in weight, and the heating and pressing are performed at 480°C for 5 minutes.